DETAILED ACTION

Response to Amendments

1. Claims 1-10, 20-23, 25, and 29 have been canceled.

Response to Arguments

2. Applicant's arguments filed on 21 July 2011 have been fully considered but they are not persuasive.

3. On pages 13, 14 of the Applicant's arguments, the Applicant argues that "the combination of a source and destination host address" is not the same as a home address because Rinne does not deal with mobile IP (i.e., the roaming of nodes) and has no need for home addresses at all. Moreover, Rinne does not teach a source home address of a mobile correspondent node communicating the Internet packets.

4. The Examiner respectfully disagrees with the Applicant's arguments.

The Applicant, in particular, argues that "source home address" in consideration of mobile IP (i.e. the roaming of nodes). However, claims recite "home source address of correspondent node" in packet radio network without describing whether mobile node (MN) is roamed to foreign network or home network to communicate with correspondent node (CN) and absence of relationships between addresses in associated with the MN and CN.

Rinne teaches "IP packets from an IP network comprising several different flows having a combination of the source and destination host addresses (col 7 lines 57-63), IP packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension

headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc. and next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header (Fig. 11, col 15 lines 2-12). AAPA teaches "mobile node's home address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network" (paragraph 0008). Rinne and AAPA is analogous art because both disclose mobile communication utilizing IPv6 hop-by-hop extension header. As shown in claim rejections, Rinne in combined with AAPA teaches "mobile source home address in a hop-by-hop extension header field" by incorporate "mobile node's home address in hop-by-hop extension" of AAPA into the method and the system of Rinne. Thus, home source address is taught by Rinne combined with AAPA.

5. On pages 14-15, the Applicant's arguments, the Applicant argues that Morrow does not teach router alert option header indicating that the remainder of the hop-by-hop extension header is optional for a router to read. Instead the flags of Morrow indicate when slow-processing is necessary (i.e. when more information is required to read), not when the remainder of the hop-by-hop extension header is optional for a router to read.

6. The Examiner respectfully disagrees with the Applicant's arguments.

Morrow teaches "hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option and Option Type (T) data field 305 indicates to routers that do

not recognize the option to forward the information packet to the next hop" (Fig. 4, col 5 lines 54-67), "Option Value field 315 is processed on the fast-path to indicate to the router what specific parts of the information packet to examine more closely (col 7 lines 7-9), "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router" (Fig. 4, col 7 lines 4-9), and, in particular, "the network processor of router only needs to process the information packet in sufficient detail to determine whether the information packet contains data of interest to the router requiring more detailed examination and slow-path processing" (col 7 lines 14-21). In other words, the "M" flag bit is optional to read for certain router that does not need to process the packet in fast-path processing while layer 3 mobile-enabled edge router reads it in slow-path. Thus, it teaches "the remainder of the hop-by-hop extension header is optional for router read."

7. On page 15 of the Applicant's arguments, the Applicant argues that layer 3 mobility-enabled edge router is not the same as teaching a gateway support node.

8. The Examiner respectfully disagrees with the Applicant's arguments.

Rinne and AAPA already teach "GGSN in core network" (Rinne col 7 lines 16-17, 40-54). Morrow teaches "M" flag is for a layer 3 mobility-enabled router performing mobility functions" (col 7 lines 4-9). In combined with Rinned, AAPA, and Morrow, only mobility-enabled edge router, e.g., 3G-SGSN, 3G-GGSN, examines mobile node's home address in hop-by-hop extension header by utilizing hop-by-hop router alert option and "M" bitmap flag. Furthermore, the GGSN is also notoriously well known packet network edge router with which the terminal exchanges its IP datagrams in a

single hop of the inner IP layer as shown in evidential reference Lucidarme et al. (paragraph 0013, 0059, US 2002/0181468).

9. On page 20 of the Applicant's arguments, Lee and Rinne/AAPA/Morrow is improper as Lee is on-analogous art. Lee is directed to IPv4, contrary to the invention, Rinne, AAPA and Morrow which all apply to IPv6.

10. The Examiner respectfully disagrees with the Applicant's arguments.

As admitted by Rinne, AAPA, and Morrow teaches IPv6 having hop-by-hop extension header, which is Mobile IP. In particular, Morrow also teaches Router Alert Option defined in IPv6" as shown in Fig. 4, col 5 lines 54-67, col 7 lines 14-21.

Lee teaches "mobile communication by utilizing Mobile IP" (col 7 lines 15-47), "IP Router Option for IP v4 to allow an IP packet to be inspected by routers for further processing if necessary" (col 3 line 5-col 4 lines 4). Since all of the prior arts are directed to "mobile communication" and "IP router option," they are analogous prior arts. Furthermore, Lee is cited NOT for structure of IP packet but for showing filtering packets based on addresses. Thus, filtering mechanism based on addresses used in mobile communication of Lee can be combined with Rinne, AAPA, and Morrow so that filtering is enabled in IPv6 mobile communication network as well.

Claim Objections

11. Claims 11, 30 are objected to under 37 CFR 1.75 because of the following informalities:

Claims 11, 30 recites "A gateway support not comprising one or more receivers, one or more controllers, the gateway support node configured to … to receive an Internet packet, … to control ingress Internet packet from the external communication networks network to the packet data bearers of the packet radio network with the one or more controllers." The Examiner suggests that the claim limitations are changed to "the one or more receivers receive an Internet packet" (line 9) and "the one or more controllers control ingress Internet packet from the external communication networks network to the packet data bearers of the packet radio network" (lines 36, 37) to conform the format of apparatus claim having physical structures to perform its corresponding function.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17, 26, 27, 30 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The amended claims are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

In those claims, the scope of claim is indefinite because the claims disclose directed to “gateway support node” in preamble without physical structure for corresponding functions in claim body because the claims are NOT a method claims, which is directed to “acts” as being performed, BUT apparatus claims. Furthermore, the preamble including “gateway support node” is not a limitation where claim is directed to a product and the preamble appears to merely recite a label for the product defined by the remainder of the claim.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. **Claim 11, 12, 15-18, 24, 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinne et al. (US 6,845,100) in view of Applicant's Admitted Prior art (US 2006/0268819, hereinafter AAPA) and Morrow (US 7,522,601).

For claims 11, 18, 24, Rinne discloses a system and a method comprising:

- **a gateway support node comprising one or more receivers and one or more controllers, the gateway support node configured to** (Fig. 3, col 7 lines 57-63: 3G-SGSN, 3G-GGSN receives IP packets, col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and "latency counter" in IPv6 hop-by-hop option)**:**
- **provide an interface between an external packet data communications network** (Fig. 3 data network (Internet)) **and a packet radio network** (Fig. 3 RNC), **the packet radio network (Fig. 3 RNC) providing a plurality of packet data bearers** (col 8 lines 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes) **for communicating the internet packets with nodes attached to the packet radio network each of the packet data bearers** (Fig. 3 RNC, UEs; col 8 lines 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes) **being defined with respect to a source home address of**

nodes communicating the internet packets (col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address**), the gateway support node being arranged to receive an internet packet** (Fig. 3, col 7 lines 57-63: 3G-SGSN, 3G-GGSN receives IP packets)**,**

- **the internet packet comprising header field, the header field including a field identifying a source address of the internet packet, a field identifying the destination address of the internet packet** (col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address)
- **and a next header field identifying whether an extension header follows the header field, a type of the extension header, and whether the extension header includes a hop-by-hop extension header** (Fig. 11 next header, type; col 15 lines 2-5: IP packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc., lines 5-12: next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header; col 15 lines 12-16: type), **the hop-by-hop extension header comprising value field indicating that the remainder of the hop-by-hop header is provided for the gateway support node, the remainder of the hop-by-hop header extension header** (Fig. 11 Hop-by-hop options header, IPv6 header; col 15 lines 2-5:1P packet according to

IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address),

- **to detect that the next header field of the internet packet includes a hop-by-hop extension header** (Fig. 11 IPv6 Extension Headers, Hop-by-hop options header, Next Hdr; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and “latency counter” in IPv6 hop-by-hop option), and
- **to detect the hop-by-hop extension header** (Fig. 11 IPv6 Extension Headers, Hop-by-hop options header, Next Hdr; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc), **and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field** (Fig. 11 value; col 15 lines 11-18: the options included in the hop-by-hop extension

have a standard format of a type value, length and a value) **is for the gateway support node** (Fig. 3 3G-SGSN, 3G-GGSN)

- **to recover information from a field provided in the remainder of the hop-by-hop extension header for use in controlling egress and/or ingress of internet packets to the packet radio network in accordance with the information** (Fig. 3 3G-SGSN, 3G-GGSN, Fig. 11 Hop-by-hop options header, IPv6 header; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address; Fig. 5; col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3; col 8 lines 55-61: classified packets are provided by QoS classifier to various RNC buffers according to the differing classes and according to the various destination addresses),
- **to control ingress of internet packets** (Fig. 4A, 4B; col 8 lines 25-26: QoS classification process may take place in the 3G GGSN; 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes) **from the external communications network** (Fig. 3 data network (Internet)) **to the packet data bearers of the packet radio network** (Fig. 3 RNC) **with the one or more controllers** (Fig. 3 3G-SGSN, 3G-GGSN; col 8 lines 25-26: QoS classification process may take place in the 3G GGSN) **by**

detecting from the information field provided in the remainder of the hop-by-hop extension header (Fig. 6 IPv6 header; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address), **a source home address of a correspondent node communicating the internet packets** (col 8 lines 49-55: combination of packet classifier and the QoS classifier residing in the UTRAN or CN can be used to classify packets destined for various bearers of various mobile terminal according to differing classes, col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address), **and**

- **allowing ingress of the internet packets to the identified packet data bearer** (col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3)
- **the gateway support node being operable upon receipt of the internet packet** (Fig. 3, col 7 lines 57-63: 3G-SGSN, 3G-GGSN receives IP packets, col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and “latency counter” in IPv6 hop-by-hop option)

Rinne discloses all the subject matter of the claimed invention with the exception for **the remainder of the hop-by-hop extension header includes a home field providing a home address of a mobile node and using the source home address to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network** whereas Rinne discloses IP packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc. and next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header (Fig. 11, col 15 lines 2-12). AAPA discloses **the remainder of the hop-by-hop extension header includes a home field providing a home address of a mobile node and using the source home address to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network** (paragraph 0008: mobile node's home address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the remainder of the hop-by-hop extension header includes a home field providing a home address of a mobile node and using the source home address to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network** of AAPA to the system and the method of Rinne, thereby the remainder of IPv6 extension

headers contains mobile node's home address. The motivation would have been to facilitate to identify the appropriate bearer through which IP data packet can be routed to a CN attached to the GPRS network (AAPA paragraph 0008).

Rinne and AAPA disclose all the subject matter of the claimed invention with the exception for **the hop-by-hop extension header including a router alert option header indicating that the remainder of the hop-by-hop extension header is optional for a router to read, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node, to detect that the router alert option header in the hop-by-hop extension header and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node** whereas Rinne and AAPA disclose mobile node's home address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network (Rinne Fig.11, col 15 lines 2-18, AAPA paragraph 0008). Morrow discloses **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read** (Fig. 4, col 5 lines 54-67, col 7 lines 14-21: hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option)**, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates

slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router)**, to detect that the router alert option header in the hop-by-hop extension header (**Fig. 4, col 5 lines 54-67, col 7 lines 14-21: hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option) **and the value field indicating that the remainder of the remainder of the hop-by-hop extension header is provided for the gateway support node** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router and such router is one close to the mobile device performing local mobility management functions or a router closer to the correspondent performing mobility function)**, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router and such router is one close to the mobile device performing local mobility management functions or a router closer to the correspondent performing mobility function). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the hop-by-hop extension header including a router alert option header indicating that the remainder of the hop-by-hop extension header is optional for a router to read, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node, to detect that the router alert option header in the**

hop-by-hop extension header and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node of Morrow to the system and the method of Rinne and AAPA, thereby, only mobility-enabled edge router, e.g., 3G-SGSN, 3G-GGSN, examines mobile node's home address in hop-by-hop extension header by utilizing hop-by-hop router alert option and "M" bitmap flag. The motivation would have been to increase the speed of information packet transmission and efficiency of communication on the network by implementing filtered router alert hop-by-hop option and filtered router bitmap flag (Morrow col 3 lines 25-50).

For claim 16 referenced by claim 11, Rinne discloses **a packet radio network operable to communicate internet packets between an external packet data network** (Fig. 3 data network (Internet)) **and nodes** (Fig 3 UEs) **associated with the packet radio network** (Fig. 3 RNC), **the packet radio network providing a plurality of packet data bearers for communicating the internet packets to and/or from the nodes attached to the packet radio network, the packet radio network including a gateway support node** (Fig. 3 RNC, UEs, 3G-SGSN, 3G-GGSN; col 8 lines 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes).

For claim 30 referenced by claim 11, Rinne discloses **IPv6 extension header** (Fig. 11 IPv6 Extension Headers).

For claim 12, Rinne discloses

- **the gateway support node** (Fig. 3 3G-SGSN, 3G-GGSN) **allowing ingress of the internet packets** (col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3) **if either the address in the source address field of the internet packet** (col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address) **or the address provided in the field in hop-by-hop extension header for the gateway support node corresponds to a packet data bearer** (Fig. 3, 11 col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and "latency counter" in IPv6 hop-by-hop option)

For claim 15, Rinne discloses

- **the gateway support node comprises a Gateway GPRS Support Node (GGSN), according to the General Packet Radio System standard** (Fig. 3 3G-SGSN, 3G- GGSN, 3G-Gateway GPRS Support Node)

For claim 17, Rinne discloses

- **the packet radio network (Fig. 3 RNC) complies with General Packet Radio System (GPRS) standard, the gateway support node comprising a Gateway**

GPRS Support Node (GGSN) (Fig. 3 3G-SGSN, 3G-GGSN, 3G-Gateway GPRS Support Node)

16. **Claims 13, 14, 19, 26, 27** are rejected under 35 U.S.C. 103(a) as being unpatentable by Rinne et al. (US 6,845,100) in view of Applicant's Admitted Prior art (US 2006/0268819, hereinafter AAPA) and Morrow (US 7,522,601) as applied to claim 11, 18, 24 above, and further in view of Lee et al. (US 6,915,325).

For claims 13, 19, 26, Rinne discloses

- **the gateway support node** (Fig. 3 3G-SGSN, 3G-GGSN) **receives the internet packet from the plurality of packet data bearers** (Fig. 3; col 8 lines 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes);
- **detecting from the information data provided in the hop-by-hop extension header field for the gateway support node a destination home address of a mobile correspondent node which is to be the destination of the internet packets** (Fig. 11; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address)

Rinne, AAPA, and Morrow disclose all the subject matter of the claimed invention with the exception for **egress packet filtering in accordance with a destination address of the internet packets, egress of the internet packets being allowed for internet packets having a legitimate destination address, and upon receipt of the internet packet and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address**. Lee discloses **a egress packet filtering in accordance with a destination address of the internet packets** (col 7 lines 22-25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter) **and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address** (col 7 lines 22- 25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter; col 4 lines 17: message traveling through the tunnel; the message travels through the tunnel only if matching the criteria of firewall). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **egress packet filtering in accordance with a destination address of the internet packets, egress of the internet packets being allowed for internet packets having a legitimate destination address, and upon receipt of the internet packet and allowing egress**

of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address of Lee to the system and the method of Rinne, AAPA, and Morrow, thereby filtering is performed in the GGSN. The motivation would have been to enhance the reliability of wireless communication by filtering message based on the destination.

For claims 14, 27, Rinne discloses

- **the gateway support node** (Fig. 3 3G-SGSN, 3G-GGSN)
- **the address provided in the hop-by-hop extension header for the gateway support node is a legitimate destination address** (Fig. 6; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address)

Rinne, AAPA, and Morrow disclose all the subject matter of the claimed invention with the exception for **allowing egress of the internet packets if either the address in the destination address field of the packet**. Lee discloses **allowing egress of the internet packets if either the address in the destination address field of the packet** (col 7 lines 22-25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter; col 4 lines 17: message traveling through the tunnel; the

message travels through the tunnel only if matching the criteria of firewall). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **allowing egress of the internet packets if either the address in the destination address field of the packet** of Lee to the system of Rinne, AAPA, and Morrow, thereby filtering is performed in the GGSN. The motivation would have been to enhance the reliability of wireless communication by filtering message based on the destination.

17. **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rinne et al. (US 6,845,100) in view of Applicant's Admitted Prior art (US 2006/0268819, hereinafter AAPA), Morrow (US 7,522,601), and Lee et al. (US 6,915,325).

For claim 28, Rinne discloses a system comprising:

- **receiving an internet packet comprising a header field, the header field including a field identifying a source address of the internet packet, a field identifying the destination address of the internet packet** (col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address) **and a next header field identifying whether an extension header follows the header and a type of the extension header, the next header field identifying that the extension header includes a hop-by-hop extension header** (Fig. 11 next header, type; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by

optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc., lines 5-12: next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header; col 15 lines 12-16: type),

- **detecting that the next header field of the internet packet includes a hop-by-hop extension header** (Fig. 11 IPv6 Extension Headers, Hop-by-hop options header, Next Hdr; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc), **and**
- **recovering information from a field provided in the remainder of the hop-by-hop extension header for use in controlling egress and/or ingress of internet packets to the packet radio network in accordance with the information** (Fig. 6 Hop-by-hop options header, IPv6 header; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address; Fig. 5; col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3; col 8 lines 55-61: classified packets are provided by QoS classifier to various RNC buffers according to the differing classes and according to the various destination addresses)

- **wherein, the controlling ingress of internet packets** (Fig. 4A, 4B; col 8 lines 25-26: QoS classification process may take place in the 3G GGSN; 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes) **from the external communications network** (Fig. 3 data network (Internet)) **to the packet data bearers of the packet radio network in accordance with the information** (col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and "latency counter" in IPv6 hop-by-hop option),
- **allowing ingress of the internet packets to the identified packet data bearer** (col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3)

Rinne discloses all the subject matter of the claimed invention with the exception for **detecting from the information field provided in the remainder of the hop-by-hop extension header field a source home address of a mobile correspondent node communicating the internet packets, using the source home address of the mobile correspondent node to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network, detecting from the information data provided in the hop-by-hop extension header field for the gateway support node a destination home address of a mobile correspondent node which is to be the destination of the internet**

packets. whereas Rinne discloses IP packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc. and next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header (Fig. 11, col 15 lines 2-12). AAPA discloses **detecting from the information field provided in the remainder of the hop-by-hop extension header field a source home address of a mobile correspondent node communicating the internet packets, using the source home address of the mobile correspondent node to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network, detecting from the information data provided in the hop-by-hop extension header field for the gateway support node a destination home address of a mobile correspondent node which is to be the destination of the internet packets** (paragraph 0006, 0007: source and destination address of CN; paragraph 0008: mobile node's home address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network; since the source address of CN is included in the hop-by-hop extension header, the destination address is implicitly included in the hop-by-hop extension field same as the source address of CN as known to conventional art at the time of filing the instant application). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **detecting from the information field provided in the remainder of the hop-by-hop**

extension header field a source home address of a mobile correspondent node communicating the internet packets, using the source home address of the mobile correspondent node to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network, detecting from the information data provided in the hop-by-hop extension header field for the gateway support node a destination home address of a mobile correspondent node which is to be the destination of the internet packets of AAPA to the system of Rinne, thereby the remainder of IPv6 extension headers contains mobile node's home address, e.g., source and destination addresses. The motivation would have been to facilitate to identify the appropriate bearer through which IP data packet can be routed to a CN attached to the GPRS network (AAPA paragraph 0008).

Rinne and AAPA disclose all the subject matter of the claimed invention with the exception for **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node, detecting the router alert option header in the hop-by-hop extension header and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node** whereas Rinne and AAPA disclose mobile node's home

address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network (Rinne Fig.11, col 15 lines 2-18, AAPA paragraph 0008). Morrow discloses **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read** (Fig. 4, col 5 lines 54-67, col 7 lines 14-21: hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option)**, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router)**, detecting the router alert option header in the hop-by-hop extension header (**Fig. 4, col 5 lines 54-67, col 7 lines 14-21: hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option) **and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router and such router is one close to the mobile device performing local mobility management functions or a router closer to the correspondent performing mobility function)**, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field**

is for the gateway support node (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router and such router is one close to the mobile device performing local mobility management functions or a router closer to the correspondent performing mobility function). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node, detecting the router alert option header in the hop-by-hop extension header and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node** of Morrow to the system of Rinne and AAPA, thereby, only mobility-enabled edge router, e.g., 3G-SGSN, 3G-GGSN, examines mobile node's home address in hop-by-hop extension header by utilizing hop-by-hop router alert option and "M" bitmap flag. The motivation would have been to increase the speed of information packet transmission and efficiency of communication on the network by implementing filtered router alert hop-by-hop option and filtered router bitmap flag (Morrow col 3 lines 25-50).

Rinne , AAPA, and Morrow disclose all the subject matter of the claimed invention with the exception for **computer readable memory device comprising**

computer executable instructions forming a computer program to be executed by a data processor, egress packet filtering in accordance with a destination address of the internet packets, egress of the internet packets being allowed for internet packets having a legitimate destination address, and upon receipt of the internet packet and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address. Lee discloses **computer readable memory device comprising computer executable instructions forming a computer program to be executed by a data processor** (col 9 lines 9-43), **a egress packet filtering in accordance with a destination address of the internet packets** (col 7 lines 22-25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter) **and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address** (col 7 lines 22-25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter; col 4 lines 17: message traveling through the tunnel; the message travels through the tunnel only if matching the criteria of firewall). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **computer readable memory device comprising computer executable instructions forming a**

computer program to be executed by a data processor, egress packet filtering in accordance with a destination address of the internet packets, egress of the internet packets being allowed for internet packets having a legitimate destination address, and upon receipt of the internet packet and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address of Lee to the system of Rinne, AAPA, and Morrow, thereby filtering is performed in the GGSN. The motivation would have been to enhance the reliability of wireless communication by filtering message based on the destination.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lucimarme pertinent to instant application is cited to show "the GGSN is packet network edge router with which the terminal exchanges its IP datagrams in a single hop of the inner IP laye" (paragraph 0013, 0059).

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jae Y. Lee whose telephone number is (571) 270-3936. The examiner can normally be reached on Monday through Friday from 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAE Y LEE/
Primary Examiner, Art Unit 2466